

#### US005541370A

# **United States Patent** [19]

# Matsuda et al.

[11] Patent Number:

5,541,370

[45] **Date of Patent:** 

Jul. 30, 1996

[54]	PRESSURE-SENSITIVE PAD AND PRODUCTION THEREOF					
[75]	Inventors: Masayuki Matsuda; Michio Komatsu; Mitsuru Ohkuma, all of Kitakyushu, Japan					
[73]	_	alysts & Chemicals Industries Co., , Japan				
[21]	Appl. No.:	256,962				
[22]	PCT Filed:	Dec. 28, 1992				
[86]	PCT No.:	PCT/JP92/01726				
	§ 371 Date:	Jul. 28, 1994				
	§ 102(e) Date:	Jul. 28, 1994				
[87]	PCT Pub. No.:	WO93/15519				
PCT Pub. Date: Aug. 5, 1993						
[30]	Foreign A	pplication Priority Data				
Fe	b. 3, 1992 [JP]	Japan 4-017892				
	U.S. Cl					
[58]	Field of Search	178/18, 19, 20; 345/141, 156, 173, 179				
[56]	[56] References Cited					
U.S. PATENT DOCUMENTS						
:	3,911,215 10/1975	Hurst 178/18				

4,628,408 12/1986 Kimura ...... 178/18

4,638,118 1/1987 Wang ...... 178/20

4,839,636	6/1989	Zeiss 345/141
4,860,372	8/1989	Kuzunuki 178/18
4,897,511	1/1990	Itaya 178/18
		Sato 345/141
4,963,417	10/1990	Taniguchi 178/18

## FOREIGN PATENT DOCUMENTS

62-133618	6/1987	Japan	***************************************	H01H	13/52
1176614	7/1989	Japan		H01H	13/02
250214	2/1990	Japan		G06F	3/03

Primary Examiner—Stephen Chin Assistant Examiner—Vijay Shankar

Attorney, Agent, or Firm—Webb Ziesenheim Bruening Logsdon Orkin & Hanson, P.C.

#### [57] ABSTRACT

A writing pad having a construction wherein two substrates each having electrodes formed on one of the surfaces are disposed in parallel in such a way that their electrodes face one another with a predetermined gap between them. The gap is defined by insulating dot spacers fixed at regular intervals to at least one of the electrode surfaces. The height G of the dot spacers is smaller than 15 µm, the average center distance L between the adjacent dot spacers is smaller than 100 µm, d>G and 3 d<L<100 d (where d is a diameter of the dot spacers on the electrode surface to which the dot spacers are fixed). According to this writing pad, when characters or graphics are inputted to the input substrate of the writing pad by an input pen, an erroneous input does not occur even when fingers, etc., erroneously come into contact with the input substrate, and the erroneous operation does not occur, either, when the input operation is repeated many times by the input pen.

### 8 Claims, 2 Drawing Sheets



